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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,402	12/14/2001	Michael R. Brickey	83448AEK	1498

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EXAMINER

CHOWDHURY, TARIFUR RASHID

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 07/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/017,402	BRICKEY ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tarifur R. Chowdhury	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 April 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 and 11-25 is/are pending in the application.
- 4a) Of the above claim(s) 23-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 1-4, 6-7 rejected under 35 U.S.C. 103(a) as being unpatentable over Ouderkirk et al. (U.S. Patent No. 5,825,543, hereinafter "Ouderkirk").**

5. As to claim 1, Ouderkirk discloses a light diffuser (col. 15, line 40) comprising a thermoplastic layer (col. 32, lines 62-63) containing thermoplastic polymeric material and microvoids (col. 16, lines 51-55).

Ouderkirk differs from the claimed invention because he does not explicitly disclose that the thickness of the voided layer and void size are sufficient to provide a diffuser having a diffuse light transmission efficiency of at least 65% and a light transmission greater than 80%. However, Ouderkirk discloses a diffuse light transmission of at least efficiency of at least 65% (at least 65% of the light is diffusely transmitted; col. 32, lines 39-47, 50-53) and a light transmission of greater than 80% (at least 80% of the light is transmitted; col. 29, lines 8-9), depending on the thickness layer (col. 12, lines 30-33). Therefore, one of ordinary skill in the art would have recognized the utility of varying thickness of the layer to obtain a desired range of diffuse light transmission efficiency of at least 65% and a light transmission greater than 80%. Therefore, the diffuse light transmission and light transmission efficiency would be readily determined through routine optimization of thickness by one having ordinary skill in the art depending on the desired end use of the product.

It therefore would be obvious for one of ordinary skill in the art to vary the thickness in order to obtain a desired diffuse light transmission efficiency and light transmission, since the diffuse light transmission efficiency and light transmission would be readily determined through routine optimization by one

having ordinary skill in the art depending on the desired end result as shown by Ouderkirk, in the absence of unexpected results. *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 190).

Still lacking is the limitation such as the microvoids having substantially circular cross-section in a plane perpendicular to the direction of light travel.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have microvoids having substantially circular cross-section in a plane perpendicular to the direction of light travel in the light diffuser device since one would be motivated to set the parameters and average dimensions of the voids by careful manipulation and stretch ratios through the use of selective compatibilizers to optimize the optical properties of the diffuser (col. 16, lines 52-62).

As per claim 2, Ouderkirk discloses the light diffuser as recited above where the difference in refractive index between the thermoplastic polymeric material and the microvoids is greater than 0.2 (col. 2, lines 66-67; col. 3, lines 1-2).

Regarding claims 3-4 and 6, Ouderkirk discloses the light diffuser as recited above are formed by organic microspheres (col. 13, lines 12-14), are substantially free of scattering inorganic particles (col. 13, lines 21-22), and contain a gas (col. 16, lines 58-59).

As to claim 7, Ouderkirk discloses the light diffuser as recited above with

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thickness uniformity less than 0.10 micrometers (uniform skin layer, col. 15, lines 44- 46).

Regarding claims 11-14, Ouderkirk discloses the light diffuser as recited above where the light transmission is greater than 87% (col. 29, lines 8-9) and where the microvoids have a major axis diameter to minor axis diameter ratio of 1.0 (col. 10, lines 41-43).

As per claims 19-20, Ouderkirk discloses the light diffuser as recited above where the thermoplastic layer comprises polyolefin polymer (col. 14, lines 10-14) and polyester polymer (col. 13, lines 21-22).

**6. Claims 5,15-18 and 21 -22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouderkirk in view of Aylward et al. (U.S. Patent No. 6,017,686, hereinafter "Aylward").**

7. Regarding claims 5 and 21-22, Ouderkirk discloses the light diffuser as recited above, however, the reference fails to specifically disclose microvoids containing crosslinked polymer beads having a particle size between 0.30 and 1.7 micrometers.

Aylward discloses a light diffuser (col. 3, lines 28-30) with microvoids containing cross-linked polymer beads (col. 5, lines 5-10,44-45) having a particle size between 0.30 and 1.7 micrometers (col. 4, lines 43-44).

It would have been obvious to one of ordinary skill in the art at the time the

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invention was made to have microvoids containing cross-linked polymer beads having a particle size between 0.30 and 1.7 micrometers since one would be motivated to provide a light diffuser with a recognized spectral transmission of at least 40% (col. 9, lines 17-18).

As to claims 15-18, Ouderkirk discloses the light diffuser as recited above, however, the reference fails to specifically disclose microvoids having an average volume between 12 and 18 cubic micrometers over an area of 1 cm<sup>2</sup> and where the light diffuser has a thickness between 12.5 and 50 micrometers. Aylward discloses a light diffuser (col. 3, lines 28-30) with microvoids having an average volume between 12 and 18 cubic micrometers over an area of 1 cm<sup>2</sup> (col. 4, lines 50-55) and where the light diffuser has a thickness between 12.5 and 50 micrometers (col. 4, lines 43-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have microvoids having an average volume between 12 and 18 cubic micrometers over an area of 1 cm<sup>2</sup> and where the light diffuser has a thickness between 12.5 and 50 micrometers since one would be motivated to provide a light diffuser with a recognized spectral transmission of at least 40% (col. 9, lines 17-18).

**8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ouderkirk in view of Wu et al. (US. Patent No. 5,346,954, hereinafter Wu).**

9. Ouderkirk discloses the light diffuser as recited above, however, the reference fails to specifically disclose the elastic modulus of the light diffuser being greater than 500 MPa.

Wu discloses a light diffuser, (col. 1, line 54) with an elastic modulus that is greater than 500 MPa (col. 11, lines 65-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a light diffuser with an elastic modulus that is greater than 500 MPa since one would be motivated to provide a light diffuser that does not crystallize under performance (col. 11, lines 57-59), which ultimately preserves and optimizes diffusion functionality.

**10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ouderkirk in view of Yamamoto et al. (US. Patent No. 5,502,011, hereinafter "Yamamoto").**

11. Ouderkirk discloses the light diffuser as recited above, however, the reference fails to specifically disclose the impact resistance of the light diffuser being greater than 0.6 Gpa.

Yamamoto discloses a light diffuser (col. 3, lines 28-30) with an impact resistance that is greater than 0.6 Gpa (col. 4, line 66).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a light diffuser with an impact resistance that is greater than 0.6 Gpa since one would be motivated to provide a ceramic having



improved mechanical properties (col. 2, lines 64-65), which ultimately preserves and optimizes diffusion functionality.

***Response to Arguments***

12. Applicant's arguments filed on April 20, 2006 have been fully considered but they are not persuasive.

In general Applicant argues that the optical elements disclosed by Ouderkirk are reflective polarizers. However, the optical elements disclosed by Ouderkirk are not limited to reflective polarizers; Ouderkirk teaches an optical film or other optical body which is used for reflective polarizers, but is not only used for reflective polarizers (col. 4, lines 12-18).

Applicant also argues that because Ouderkirk uses a reflective polarizer, at least half of the light is reflected from Ouderkirk, and thus it cannot satisfy the light transmission efficiency of the present claims.

However, as stated above, Ouderkirk teaches an optical film or other optical body which is used for reflective polarizers, but is not only for reflective polarizers; furthermore, Ouderkirk does not teach that at least half of the light is reflected.

Applicant also argues that the present invention provides a much higher total transmission, diffuse transmission and diffuse transmission efficiency than does the reflective polarizer of Ouderkirk.

However, as stated above, Ouderkirk teaches an optical film or other optical body which is used for reflective polarizers, but is not only for reflective polarizers; Furthermore, Ouderkirk teaches the variation of thickness and other parameters to

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obtain desired transmission properties of the film (col. 12, lines 30-33) depending on the particular use of the film (film application; col. 12, line 42). Therefore, one of ordinary skill in the art would have recognized the utility of varying the thickness of the layer and other parameters to obtain desired transmission properties. Therefore, the transmission properties would be readily determined through routine optimization of thickness and other parameters by one having ordinary skill in the art depending on the desired end use of the product.

In response to applicant's argument that the polarizer of Ouderkirk cannot transmit more than 50% of the incident light, it is respectfully pointed out to applicant that Ouderkirk teaches that light diffusely transmitted through the optical body (col. 34, lines 6-8) and therefore does not teach that diffusion is inconsistent with the objective of the invention.

In response to applicant's arguments, the recitation "'high transmission" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951) (see also MPEP 2111.02)

Further, applicant's argument that the diffuser of the invention is designed to be used between the backlight and the polarizer of LC displays to diffusely

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transmit the light whereas the Ouderkirk element is a polarizer, is irrelevant since the claim does not recite that the diffuser is between a backlight and a polarizer wherein the diffuser diffusely transmit the light but only recites a diffuser having certain characteristics what is disclosed by Ouderkirk as explained in the rejection above.

It is also pointed out to applicant that even though applicant recites that the light transmission is greater than 80%, nowhere in the claim applicant recites or suggests that the transmission is actually the total transmission of the diffuser and thus Ouderkirk disclosing transmission of 87.1% even for one state of polarization reads on the recited claim limitation. Further, a diffuser having a transmission greater than 80% is not considered a completely transmission diffuser unless the light transmission is 100%. Therefore, Ouderkirk reads on the claim limitation as the diffuser being a transmission diffuser since it transmits certain percentage of light.

Therefore, the rejection was proper and thus still maintained.

### ***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

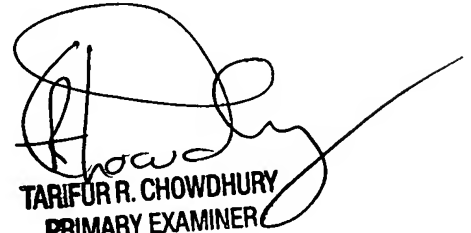
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R. Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nelms C. David can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TRC  
July 03, 2006



TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER